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Thumbs: The Brain's (New) Writing Instrument

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Close your eyes. Imagine this; the year is 1955, the Vietnam War has just begun. You are happily married, you live in a cute, little town, but your significant other has just been drafted into the service. The only form of contact you will have with one another is via letters. Your love for him is so strong, you write vigorously: sharing your days, the town gossip, and everything good and new in an attempt to keep his spirits up. Now, on the other end of the story, you are *in* Vietnam. Your days are spent fighting, missing home, and longing for your loved one. Times are hard, your only goal is to survive. Finally, you receive letters in the mail, from her. Upon opening them, you recognize the writing: beautiful, swirling cursive. It looks as though it took hours to write, the font making each word even sweeter. There is nothing else like that letter in the world; nothing else that could bring you the joy of her unique, twirling cursive writing. Years later, you look back at those treasured letters, reading them to your grandchildren. Their eyes glisten with admiration for the distant romance. Your hope for the love letters is to instill the importance of cursive writing, both for them and the generations to come while never fully allowing the effects of texting or typing to limit their brains' development.

Fast forward to 2019, where this "fancy" writing is no longer in the curriculum of Common Core education (Doverspike, 2015). As of 2014, nearly 45 American states did not require handwriting in their everyday learning (Petrescu, 2014). Microsoft Word is the new calligraphy while pens are collecting dust (Petrescu, 2014). Cursive remains an art form; however, now according to *The New York Times,* it is becoming more of a mystery to the approaching generation (Zezima, 2011). Endless love letters are being replaced with emotionless text messages and emails (Petrescu, 2014). Yet, cursive is said to be a language that gives one's hand writing personal style (Weidmann, 2014). According to *The Federalist*, "Children no less than

adults long to express their individuality and creativity" (Doverspike, 2015). What better way to do it than a customized signature?

While printing today may be more legible than makeshift cursive from people who do not know how to use it, Heidi Harralson, a graphologist interviewed by "*The New York Times,"* reveals this blocky writing puts people at a higher risk of forgery (Zezima, 2011). The lack of complexity in printing allows others to easily copy someone else's signature (Zezima, 2011). However, this risk seems to be unimportant to today's educators. In an interview for "*The New York Times*," principal Jacqueline DeChiaro, from an elementary school in New York, claims, "Schools today, we say we're preparing our kids for the 21st century," questioning whether or not cursive really is a 21st century skill (Zezima, 2011). Other instructors interviewed by *The Times* reveal that unless the topic is preparing students for standardized testing, there is not enough time to focus on their adequate handwriting skills (Zezima, 2011).

This idea brings the subject back around to cursive as an art form. Ken Robinson did a lecture at a TedTalk convention, informing viewers that schools kill creativity. In his talk, he claims educators are prioritizing what subjects are useful for work later in life, steering students away from so-called "fun" (Robinson, 2013). However, according to Anca Petrescu (2014), almost all employers still require some sort of handwriting. Robinson (2013) also states that academic ability and intelligence dominate creativity. However, there are three things people must remember about intelligence; intelligence is diverse, distinct, and dynamic: meaning students do not have to be only math geniuses to be considered smart (Robinson, 2013). The only solution to this problem that so many face, is to consider the gift of the human imagination (Robinson, 2013). Educators are said to "mine the minds of students, looking for a particular commodity," while they should be worrying about educating the whole being (Robinson, 2013).

Learning cursive will help this diminishing creativity to flourish in the classroom (Doverspike 2015). According to Weidmann (2014), in his TedTalk lecture on 21st century writing, "handwriting helps develop the brain." This claim is backed up by an article from *The Federalist* admitting that writing *is* indeed slower, but it allows students to take better notes by summarizing, pointing out key words and phrasing- all written in a way they understand (Doverspike, 2015). The process of handwritten notes stimulates the brain's Reticular Activating System (RAS): highlighting what is right in front the notetaker and allowing them to be more focused on the material (Doverspike, 2015). The manner in which the brain uses writing to take notes actually accelerates students' learning: improving both their test scores and their ability to pick up a new language (Doverspike, 2015). In an attempt to increase the benefits of handwriting, Goodwin recommends teaching typing should be held off until the age of 10 to 12, after a child's ability to write is fully developed. (Goodwin, 2018). As Maria Montessori once stated, "the hand is the instrument to the brain," but what happens to the brain when that device is limited to two thumbs and a six-inch phone screen (Petrescu, 2014)?

According to *The Federalist*, the importance of writing is so prominent that "the relationship between handwriting and composition quality is even seen on an MRI" (Doverspike, 2015). A brain with good handwriting is shown to be more active in the areas that deal with cognition, language and executive functioning- such as managing oneself (Doverspike, 2015). A study at Indiana University brought in "pre-literate" 5-year-olds for MRIs (Petrescu, 2014). Results showed children who practiced printing had an enhanced neural activity, more adult-like than those simply looking at the letters when typing on a keyboard, indicating that a form of learning took place (Petrescu, 2014). According to *A Dilemma of the Digital Age*, "emerging research shows that handwriting increases brain activity, hones fine motor skills, and can predict

a child's academic success in ways that keyboarding can't" (Petrescu, 2014). Yet, the argument remains: there is not enough old-fashioned composition taking place in the classroom (Doverspike, 2015).

Handwriting in general is an important skill to have; however, many additional benefits come from the art that is cursive writing. Due to the intricacy of cursive, the lettering is more demanding, making one's brain work harder (Doverspike, 2015). Increased brain activity results in a higher level of coordination and effort amongst students (Comajuncosas, Andreu, et al., 2017). In a study conducted on the implications of cursive handwriting, outcomes show cursive might actually improve handwriting speed (Comajuncosas, Andreu, et al., 2017). Fluency in handwriting allows a student's brain to better arrange the information being given (Doverspike, 2015). This process allows the information to be better ingrained in the brain; whereas, typing lacks the tactile movement of writing; therefore, proving not as effective (Weidmann, 2014).

The physical movements of cursive have shown to be beneficial for several different areas of learning disabilities as well. According to Rand Nelson of Peterson Directed Handwriting, "exposure to cursive writing allows a child to overcome motor challenges. Physically gripping a pen and practicing cursive with its swirls and connections 'activates parts of the brain that lead to increased language fluency'" (Doverspike, 2015). While it may be difficult to perform, cursive can be beneficial for those who may suffer from dyslexia and dysgraphia (Doverspike, 2015). Cursive writing can also act as a grounding and sensory integration exercise for children who have behavioral disorders, such as attention deficit hyperactivity disorder, otherwise known as ADHD (Doverspike, 2015). The connectivity and loops of the writing help reduce distractions, in turn, creating a calming factor for both those with impairment and neurotypical people

(Doverspike, 2015). Other kinesthetic benefits of cursive include learning self-control and a lowered rate of cognitive decline amongst elders (Doverspike, 2015).

Some may be asking themselves, if cursive is so effective, what value is there in learning how to type 100 words per minute (Petrescu, 2014)? Weidmann (2014) advises viewers to stop putting hand writing and technology in opposite corners. While typing is not something that should be learned over hand writing, technology is not necessarily a bad thing (Weidmann, 2014). The dependency people put on technology is the downfall of handwriting (Weidmann, 2014). *The Federalist* stresses the importance of multilingual hands, explaining that typing is important too (Doverspike, 2015). However, beginning learning with writing allows the brain to later recognize the same letters on a computer keyboard (Doverspike, 2015). Due to the ever-advancing technological world we live in, it is important to be fluent in typing, but knowing all three skills (printing, typing, and cursive writing) is the most ideal way to enhance one's learning (Doverspike, 2015). "Printing, cursive writing, and typing on a keyboard are all associated with distinct and separate brain patterns," each activating different regions in the brain, including the working memory (Doverspike, 2015).

Therefore, one type of communication is not more important than the other. I, personally, use all three forms of prose. Physically writing things in a notebook has always been more beneficial for me, so most of my notes are written by hand. When I began my career at Northern Michigan University, I wrote almost strictly in printing. Then, I realized I would not be able to keep up with the lecture this way, so I switched to cursive. I (regretfully) admit, the font was a little rough looking at first. However, as time went on and cursive seemed to be working for me, I began trying to refine my skills. I worked really hard to make my cursive look elegant, looping my L's and curling my O's. The switch in writing style reminded me how much I should care

about the neatness of my handwriting. When I was in middle and high school, I helped my mum and my grandma grade their papers, and for some reason, it always bothered me when I would get an illegible assignment. I find myself taking great pride in nice handwriting; therefore, I make sure all of my work is done with grace. Both my mother and grandmother had beautiful cursive I was always so envious of, which helped instill the importance of this art in me. However, as a student of the twenty-first century, I acknowledge that I use technology more than I ideally wish I did. After extensive research on this topic, I am going to challenge myself to back away from the screen and use the handwriting I was taught in grade school. Emails are convenient, but there is nothing compared to a handwritten letter. The most essential piece of knowledge to take away from this paper is to remember to find a balance.

While all three styles of writing are important, people must not get swept away in technology. Cursive should still be taught in the classroom and used daily. Without it, the world is at risk of forgery, loss of historic texts, and dismissal of a beautiful art form. *The New York Times* shares a quote from an anonymous blogger, saying, "It suddenly hit me, however, that if my grandchildren never learn to write in cursive, they will also be unable to read it. They will never be able to decipher things I wrote by hand and saved to show them. My old recipe cards will also need to be translated for them. They will never be able to read the stash of WWII letters my parents wrote to each other" (Doverspike, 2015). Think back to the introduction of this paper, explaining the woman's love letters as though there was nothing else like it in the world. In "Penmanship for the 21st Century," Weidmann (2014) compares cursive to that of someone's fingerprint: one of a kind. So, I ask you, please do not let something so unique slip away.

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